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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,147	07/27/2001	Thomas J. Pinnavaia	MSU 4.1-553	1331

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EXAMINER	
LISH, PETER J	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/917,147	PINNAVAIA ET AL.	
	Examiner	Art Unit	
	Peter J. Lish	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/05 has been entered.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3-8 are under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gonzalez-Pena et al. ("Thermally Stable Mesoporous Alumina...").

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see table 1). Non-ionic surfactants were used, such as PEO and DPA. It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 1. Gonzalez-Pena et al. does not disclose multiple wide angle x-ray diffraction lines that would establish a boehmite or gamma alumina structure, but may inherently show these lines in an x-ray diffractogram. Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however, it is expected that the alumina of Gonzalez-Pena meet this limitation because no difference is seen between the alumina of Gonzalez-Pena and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1 and 3-8 are under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gonzalez-Pena et al. ("Improved Thermal Stability of Mesoporous Alumina Support...")

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see Figure 1B and Table 1

under Results and Discussion). Non-ionic surfactants were used, such as PEO. It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 2. Gonzalez-Pena et al. does not disclose multiple wide angle x-ray diffraction lines that would establish a boehmite or gamma alumina structure, but may inherently show these lines in an x-ray diffractogram, especially since boehmite phases are taught (see results and discussion). Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however, it is expected that the alumina of Gonzalez-Pena meet this limitation because no difference is seen between the alumina of Gonzalez-Pena and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1 and 3-8 are under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pinnavaia et al. (US 6,027,706).

Pinnavaia et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (see column 23, lines 39-40). Non-ionic surfactants were used, such as PEO. A low angle x-ray diffraction line corresponding to a basal spacing of at least 3.0 nm is taught (column 6, line 57). Pinnavaia et al. does not disclose multiple wide angle x-ray diffraction lines that would establish a boehmite or gamma alumina structure, but may inherently show these lines in an x-ray diffractogram. Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however,

it is expected that the alumina of Pinnavaia meet this limitation because no difference is seen between the alumina of Pinnavaia and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1 and 3-8 are under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bagshaw et al. ("Mesoporous Alumina Molecular Sieves").

Bagshaw et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g. Non-ionic surfactants were used, such as PEO. A low angle x-ray diffraction line corresponding to a basal spacing of at least 3.0 nm is taught. Bagshaw et al. does not disclose multiple wide angle x-ray diffraction lines that would establish a boehmite or gamma alumina structure, but may inherently show these lines in an x-ray diffractogram. Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however, it is expected that the alumina of Bagshaw meet this limitation because no difference is seen between the alumina of Bagshaw and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or

inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1, 3, and 6-8 are under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Vaudry et al. ("Synthesis of Pure Alumina Mesoporous Materials").

Vaudry et al. discloses mesostructured alumina with pore volumes of greater than or equal to 0.40 cm^3/g and with surface areas greater than 200 m^2/g (Table 5). A low angle x-ray diffraction line corresponding to a basal spacing of at least 3.0 nm is taught (Table 2). Vaudry et al. does not disclose multiple wide angle x-ray diffraction lines that would establish a boehmite or gamma alumina structure, but may inherently show these lines in an x-ray diffractogram. Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however, it is expected that the alumina of Vaudry meet this limitation because no difference is seen between the alumina of Vaudry and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1 and 3-6 are under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kolenda et al. (US 6,197,276).

Kolenda et al. teach a process for the formation of mesostructured hydrated alumina. The process involves mixing a solution, A, containing aluminum in the form of cation-monomers with a solution B, containing non-ionic surfactants (examples 2, 5, and 7). Kolenda teaches the tetrahedral and octahedral coordination of the mesoporous hydrated alumina. While Kolenda et al. does not explicitly teach the properties of the hydrated alumina product, it is expected to have these properties because substantially no difference is seen between the process of Kolenda et al. and that of the instantly claimed invention. Crystalline framework walls, containing no amorphous hydrated alumina, are not explicitly taught, however, it is expected that the alumina of Kolenda meet this limitation because no difference is seen between the alumina produced by the process of Kolenda and that of the instantly claimed invention. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es), the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Response to Arguments

Applicant's arguments filed 6/13/05 have been fully considered but they are not persuasive. As stated in the office action of 10/22/03, it is unclear as to why the references fail to meet the claimed limitation of crystalline framework walls. Without a clear showing that the alumina of the prior art do not contain purely crystalline framework walls, it remains expected that they do because the products of the prior art appear to be substantially identical or produced

by substantially identical processes. Additional reasons for the expectation of atomically ordered crystalline walls are given in the office action of 4/14/04.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL

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